

## CLAIMS:

What is claimed is:

1. An activity management system for managing service activities relating to semiconductor manufacturing comprising:
  - a data collection system configured to receive service activity data relating to at least one of a service component, a service operator, and a service account;
  - a data storage system coupled to said data collection system and configured to store said service activity data; and
  - a service action system coupled to said data collection system and said data storage system, and configured to provide service action data using said service activity data by performing at least two of a plurality of service functions comprising providing service component repair, providing service component start-up, providing service component preventative maintenance, providing service component cleaning, providing service component revisions, providing service component enhancements, providing service component de-installation, providing service education, and providing service collaboration.
2. The activity management system of claim 1, wherein said plurality of service functions further comprises setting project action plans, setting customer action plans, setting service component operations, tests and corrective actions, setting service component documentation, setting escalation hot-boards, setting key point indicator dashboards, preparing reports, setting procedures, setting job descriptions, setting help desk action plans, setting employee action plans, defining service agreements, and defining service components.
3. The activity management system of claim 1, wherein said service component includes at least one of a manufacturing system (MS) platform, a manufacturing system (MS) tool, and a manufacturing system (MS) part.

4. The activity management system of claim 3, wherein said MS platform includes at least one of a cluster tool arrangement, and a serial tool arrangement.

5. The activity management system of claim 4, wherein said MS tool comprises at least one of an etch system, a deposition system, a track system, a thermal system, an ion implant system, a lithography system, a planarization system, a metrology system, and a test system.

6. The activity management system of claim 4, wherein said MS part comprises at least one of a consumable part, and a non-consumable part.

7. The activity management system of claim 1, wherein said service account includes at least one of a service contract, a service warranty, and a manufacturing system department.

8. The activity management system of claim 1, wherein said data collection system, said data storage system, and said data action system are configured as at least one of a web-based software application, and a downloadable client software application.

9. The activity management system of claim 1, further comprising:  
an operator interface coupled to said data collection system and configured to provide an interface for said service operator to enter said service activity data to said data storage system, and coupled to said service action system and configured to provide an interface for said service operator to extract said service action data from said data action system.

10. The activity management system of claim 9, wherein said operator interface includes a graphical user interface (GUI).

11. The activity management system of claim 1, wherein said data action system is configured to perform said service component repair by performing an interactive case study.

12. The activity management system of claim 11, wherein said service action system provides at least one of a test for said service component and a corrective action for said service component by matching current service activity data for said service component with said service activity data stored in said data storage system.

13. The activity management system of claim 12, wherein said service action system is configured to provide a procedure for said test.

14. The activity management system of claim 12, wherein said service action system is configured to provide a procedure for said corrective action.

15. The activity management system of claim 12, wherein said service component includes a MS tool, and said corrective action includes a replacement of a MS part in said MS tool.

16. The activity management system of claim 15, wherein said activity management system is configured to track a first MS part and a second MS part, said first MS part replaces said second MS part in said MS tool.

17. The activity management system of claim 12, wherein said service action system utilizes a result from said test to provide at least one of another test for said service component and another corrective action for said service component by matching said result with said service activity data stored in said data storage program.

18. The activity management system of claim 3, wherein said service component comprises a MS tool with one or more MS parts, and said service action system is configured to associate said one or more MS parts with said MS tool.

19. The activity management system of claim 2, wherein said data collection system is configured to permit a first service operator to assign a

task to a second service operator for at least one of an employee action plan, a customer action plan, and a project action plan.

20. The activity management system of claim 2, wherein said service action system is configured to provide service action data to a first operator in order to assess the performance of a second service operator.

21. A method of using an activity management system to assist in performing a service action relating to semiconductor manufacturing comprising:

- providing a data collection system configured to interact with a service operator and collect service activity data from said service operator, wherein said service activity data is associated with at least one of a service operator, a service component, and a service account;

- providing a data storage system coupled to said data collection system, and configured to store said service activity data;

- providing a service action system coupled to said data collection system and said data storage system, and configured to interact with said service operator to provide service action data to said service operator using said service activity data stored in said data storage system in order to perform at least two of a plurality of service functions comprising service component repair, providing service component start-up, providing service component preventative maintenance, providing service component cleaning, providing service component revisions, providing service component enhancements, providing service component de-installation, providing service education, and providing service collaboration; and

- utilizing said service action data to perform a service action.

22. An activity management system for managing service activities relating to semiconductor manufacturing comprising:

- a data collection system configured to collect service activity data relating to semiconductor manufacturing services ;

- a data storage system coupled to said data collection system and configured to store said service activity data; and

a service action system coupled to said data collection system and data storage system and configured to perform a service component service function and a non-service component service function in order to assist a service operator in performing a service action.

23. The activity management system of Claim 22, wherein said data collection system is configured to collect said service activity data by manual input.

24. The activity management system of Claim 22, wherein said data collection system is configured to collect said service activity data by automatic input.

25. The activity management system of Claim 22, wherein said data collection system collects service activity data related to at least one of a service component, a service operator, and a service account.

26. The activity management system of Claim 22, wherein said data storage system stores said service activity data in association with at least one of a service component, a service operator, and a service account.

27. The activity management system of Claim 22, wherein said service action system is configured to perform said service component service function by performing at least one of service component repair, providing service component start-up, providing service component preventative maintenance, providing service component cleaning, providing service component revisions, providing service component enhancements, providing service component de-installation, and providing service education

28. The activity management system of Claim 22, wherein said service action system is configured to perform said non-service component service function by allowing a service operator to:

interface with project action plans or customer action plans;

integrate a new test or corrective action or amend a current test or corrective action;

enter a new documentation pertaining to a MS platform, a MS tool, a MS part, or a MS service agreement;

review, enter, or amending escalation hot-boards;

access key performance indicator (KPI) dashboards, reports, procedures, job descriptions, help desk action plans, employee action plans, or files;

collaborate with other service operators; or

access information relating to MS service agreements, MS platforms and MS tools, and MS parts.

29. The activity management system of Claim 22, wherein said service action system is further configured to provide service action data used by the service operator to perform service actions.

30. A method of using a computer system to manage service activities relating to semiconductor manufacturing comprising:

using said computer system to collect service activity data relating to semiconductor manufacturing services;

using said computer system to store said service activity data; and

using said computer system to perform a service component service function and a non-service component service function; and

performing a service action based on results of said service component or non-service component service function.

31. The method of Claim 30, wherein said collecting said service activity data comprises manual input.

32. The method of Claim 30, wherein said collecting said service activity data comprises automatic input.

33. The method of Claim 30, wherein said collecting comprises collecting service activity data related to at least one of a service component, a service operator, and a service account.

34. The method of Claim 30, wherein said storing comprises storing said service activity data in association with at least one of a service component, a service operator, and a service account.

35. The method of Claim 30, wherein said performing a service component service function comprises providing service action data to facilitate at least one of service component repair, providing service component start-up, providing service component preventative maintenance, providing service component cleaning, providing service component revisions, providing service component enhancements, providing service component de-installation, and providing service education.

36. The method of Claim 30, wherein performing said non-service component service function comprises providing service action data allowing a service operator to:

- interface with project action plans or customer action plans;
- integrate a new test or corrective action or amend a current test or corrective action;
- enter a new documentation pertaining to a MS platform, a MS tool, a MS part, or a MS service agreement;
- review, enter, or amending escalation hot-boards;
- access key performance indicator (KPI) dashboards, reports, procedures, job descriptions, help desk action plans, employee action plans, or files;
- collaborate with other service operators; or
- access information relating to MS service agreements, MS platforms and MS tools, and MS parts.

37. A computer readable medium containing program instructions for execution on a processor, which when executed by the processor, cause a computer system to perform the steps in the method recited in claim 30.

38. An activity management system for managing service activities relating to semiconductor manufacturing comprising:

means for collecting service activity data relating to semiconductor manufacturing services;

means for storing said service activity data coupled to said means for collecting; and

means, coupled to said means for collecting and said means for storing, for performing a service component service function and a non-service component service function in order to assist a service operator in performing a service action.